

☆ يتكون الامتحان من (4) اسئلة في عدد (6) صفحات

☆ اجابة السؤال الأول و الثاني و الثالث في ال ANSWER TABLES المخصص لذلك

Question No. I

{30 Marks}

Choose the correct answer for each question. Record your choice in the answer table.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

1- ω-Conotoxin was the lead drug for

- a- Ziconotide b- Brevetoxin c- Ciguatera d- Tetrodotoxin

2- Dipeptides

- a- Amino acids chain b- Amino acids + carboxylic acids chain
c- Amides and carboxylic groups d- b & c

3- Marine biotechnology

- a- Culture-independent method b- Interaction between creatures
c- Poisonous materials d- None of the above

4- Marine toxins

- a- Moray eel b- Jelly fish c- Maito fish d- All of the above

5- Overcoming bacterial resistance

- a- Phage lysins b- Facilitate entrance of antibiotic
c- Bacterial cell death d- All of the above

6- Trabectedin {Yondelis™}

- a- Safracin B b- Mitosis
c- DNA polymerase d- anti-metabolite

7- Elemental analysis

- a- C=O groups b- Percentage elements

c- OH groups

8- Coelenterazine

a- Luciferin

c- Cardiac output

9- Genetic code

a- Three nucleotides

c- Sequence of nucleotides

10- Endonucleases

a- Cleave DNA at specific sites

c- Cleave RNA at specific sites

11- Recombinant DNA technology

a- Cleaves DNA cleavage

c- Cut up and join together genetic material

12- X-ray crystallography

a- Structure and stereochemistry

c- Types of carbons

13- Gene guns

a- Natural engineers

c- Cleave DNA

14- Metagenomics

a- RNA isolation

c- Gene identification

15- Bioassay-guided fractionation

a- Assay or multiple assays

c- Testing the crude extract

d-3D Structure

b- Fluorescent Jelly fish

d- All of the above

b- Part of DNA

d- None of the above

b- Isolate DNA

d- RNA lysis

b- DNA isolation

d- Nucleotides sequence

b- Types of protons

d- Unsaturation

b- Biolistic particle delivery

d- Cut up and join genetic material

b- DNA isolation

d- Hereditary characters

b- Testing preliminary fractions

d- All of the above

Question No. II**{15 Marks}**

Match the scientific term number in **column A** with the letter equivalent to definition in **column B**.

Record the chosen letter in the following table

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Column A	Column B
1- Drug resistance	a- Ca^{++} channels blocker on the neurons in the spinal cord
2- Tetrodotoxin	b- Gene isolation and transfer to <i>E. coli</i> or yeast
3- Azotemia	c- Acts as DNA alkylating in colorectal cancer
4- Therapeutic polypeptides	d- Treatment of Herpes and Chickenpox
5- Eribulin	e- Apoptosis in Pancreatic cancer
6- Trabectedin	f- Drug inspired from Dolastatin 10
7- Vidarabine	g- Marine Natural Products {MNPs} Development
8- <i>Agrobacterium tumefaciens</i>	h- Structural trimming of Halichondrin B
9- Biotechnology	i- Growing large number of M.O. in short time
10- Gene hunting	j- Diving deeper than 100 feet in Ocean's water
11- Codon	k- Preserved in lyophilized state at low temperature
12- Brentuximab	l- Natural genetic engineer
13- Aplidin	m- Triplet of nucleotides
14- Ziconotide	n- Gene finding
15- HTPS	o- 3000 times more active than morphine as pain killer

Question No. III**{15 Marks}****State if the following statements are true {T} or false {F}. Record your choice in the answer table**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

- 1- Marine pharmaceuticals are characterized by wide chemical diversity
- 2- EIMS is more preferable than ESIMS in analysis of polypeptides
- 3- Brine shrimp toxicity is an important step in isolation of bioactive marine drugs
- 4- During extraction, purifications and isolation, polypeptides are stable
- 5- Structural trimming of some marine natural products may be applied
- 6- Few bioactive marine compounds fail in the clinical trials phases
- 7- Omega-3 fatty acids esters are more preferable than omega-6 fatty acids esters
- 8- Inorganic solvents are usually used in extraction of marine drugs
- 9- Scientists must know how to culture marine organisms in the laboratory.
- 10- Blue green algae are also given the name cyanobacteria.
- 11- In biotechnology, genetic code is specific for each genus
- 12- Marine polypeptides are considered as the drugs of future
- 13- It doesn't matter for scientists to know a background about marine creatures taxonomy
- 14- Ciguatoxin can be used as an alternative to digoxin {digitalis}
- 15- Scientists had many other choices than to carry out total synthesis of Eribulin {Halaven}

Question No. IV**{20 Marks}****Rationalize the following statements**

1- Marine biotechnology will make production of new omega-3 fatty acids with 7 un-saturations easy.

2- Scientists couldn't isolate the gene cluster of Halichondrin B

3- Structural trimming may be needed in some marine drugs

4- Prilalt is used in people who do not respond to standard pain-relieving medications e.g. Morphine

5- It is important to determine the stereochemistry of the amino acids in bioactive polypeptides

Now, go to the sea



Relax, drink ice tea

انتهت الاسئلة

Best Wishes
Dr. Omar M. Sabry